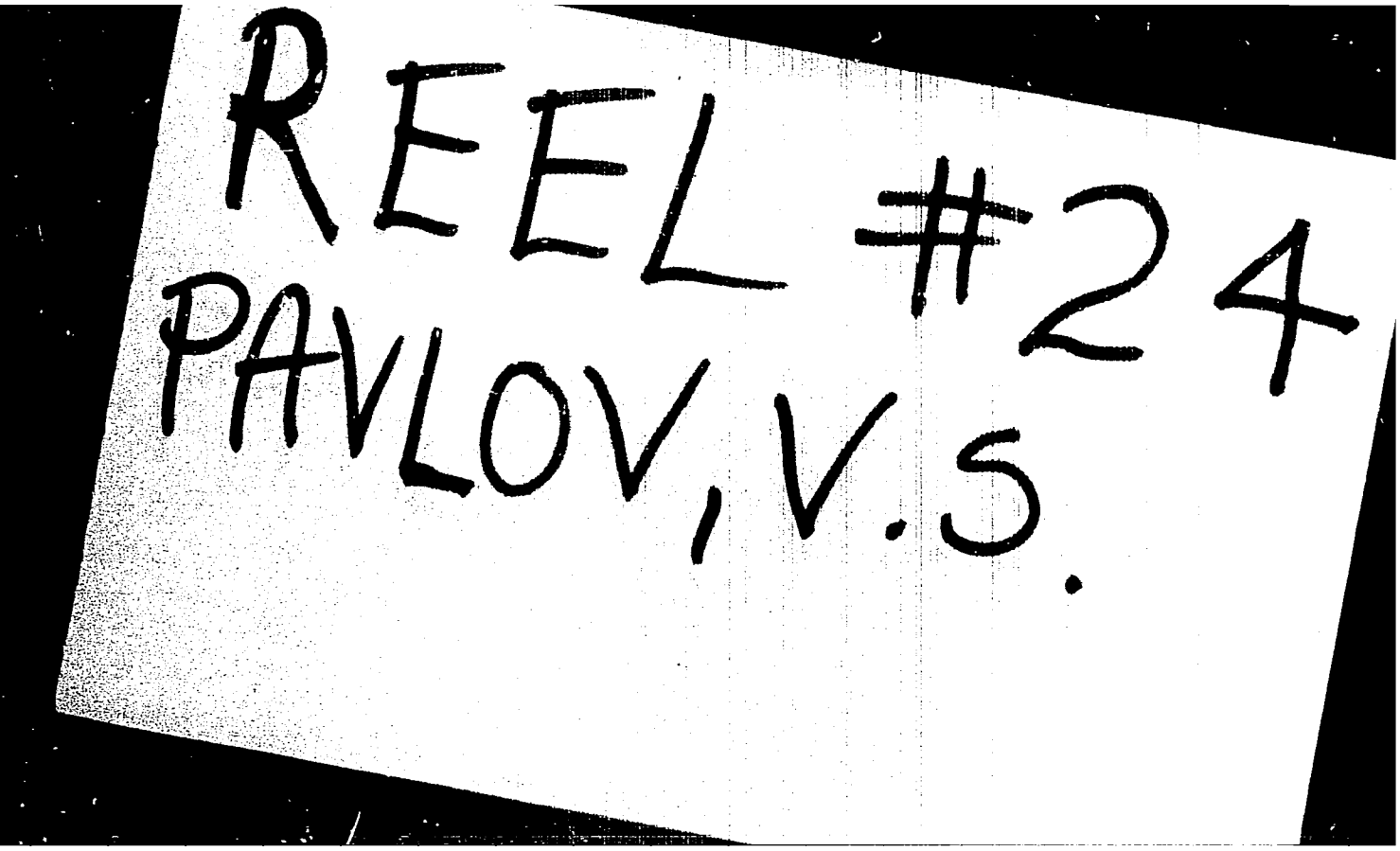

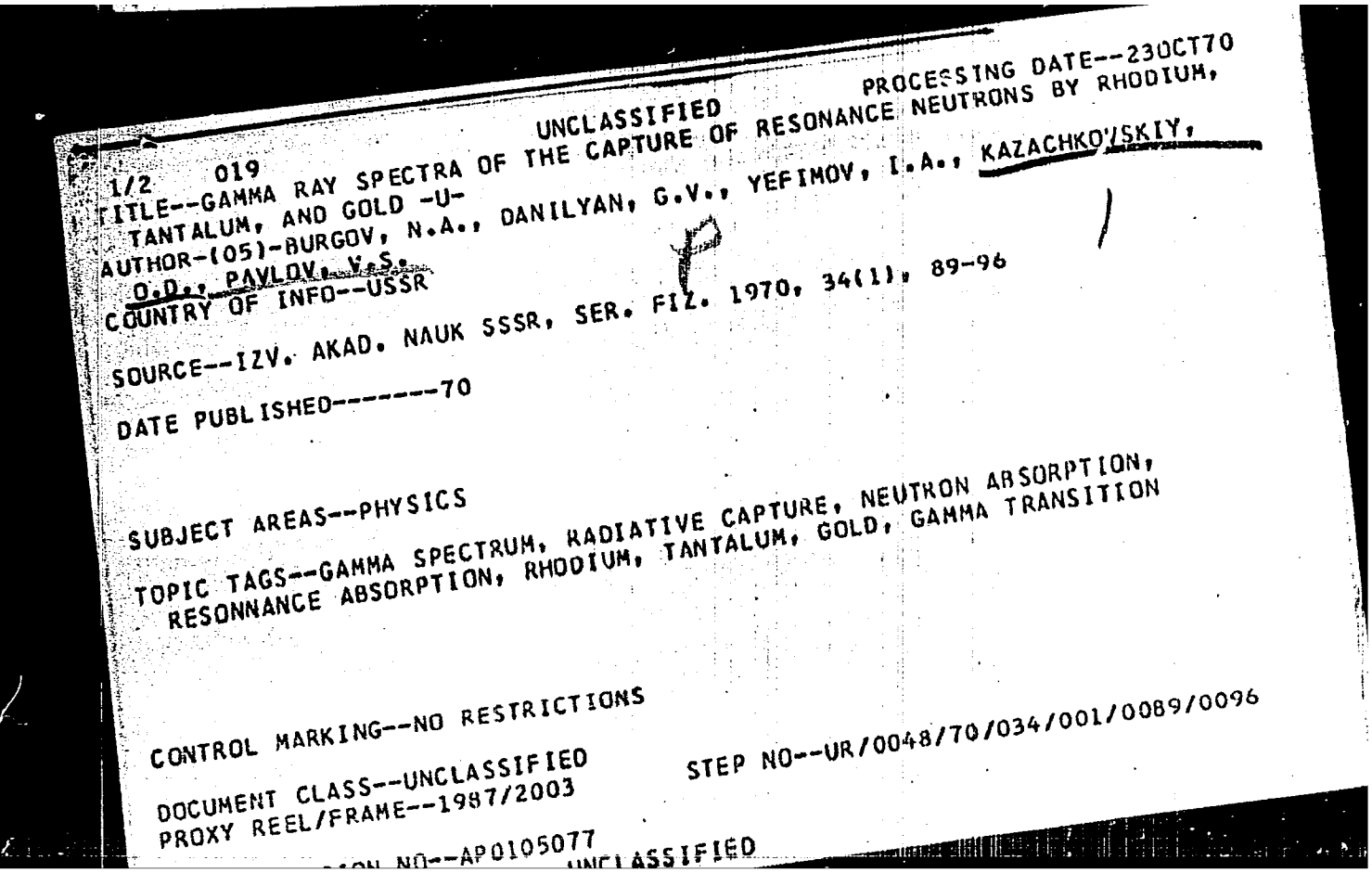

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--GAMMA RAY SPECTRA OF THE CAPTURE OF RESONANCE NEUTRONS BY RHODIUM, TANTALUM, AND GOLD -U-

AUTHOR-(05)-BURGOV, N.A., DANILYAN, G.V., YEFIMOV, I.A., KAZACHKO'SKIY, O.D., PAVLOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 89-96

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAMMA SPECTRUM, RADIATIVE CAPTURE, NEUTRON ABSORPTION, RESONNANCE ABSORPTION, RHODIUM, TANTALUM, GOLD, GAMMA TRANSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0048/70/034/001/0089/0096

PROXY REEL/FRAME--1987/2003

[illegible]ON NO--AP0105077 UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23JCT70

2/2 019

CIRC ACCESSION NO--AP0105077

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRA OF GAMMA RAYS FROM THE CAPTURE OF THE RESONANCE NEUTRONS (0.5 IS SMALLER THAN E SUBN IS SMALLER THAN 7.0 MEV) BY RH, TA, AND AU NUCLEI WERE MEASURED BY THE GLOBAL METHOD. ADVANTAGES AND DISADVANTAGES OF THE SUGGESTED METHOD ARE DISCUSSED. THE ENERGIES AND INTENSITIES OF THE GAMMA TRANSITIONS IN PRIME104 RH, PRIME182 TA, AND PRIME198 AU WERE CALCD. FROM THE EXPTL. DATA. THE ENERGIES AND SPINS OF THE LOWER EXCITED STATES OF THESE NUCLEI ARE PRESENTED AND COMPARED WITH THE ANALOGOUS DATA OF OTHER WORKS. THE NEWLY DISCOVERED STATES ARE INDICATED.

UNCLASSIFIED

USSR UDC: 539.4

ZHEMCHUZHNIKOV, G. V., PAVLOV, V. V., Kiev

"Some Characteristic Cases of Brittle Ruptures of Welded Structure"

Kiev, Problemy Prochnosti, No 8, Aug 73, pp 110-113.

Abstract: Certain cases of sudden rupture of welded structures of low-carbon and low-alloy steels are analyzed. It is pointed out that the primary reasons for sudden rupture are a combination of stress concentration, residual tensile stresses and low temperatures.

1/1

USSR UDC 617-001.28-092.8-036.8-07:616.155.1-007.1-07

BAYSOGOLOV, G. S. and PAVLOV, V. V., Department of Radiation Therapy of Hematological Diseases, Scientific Research Institute of Medical Radiology, Academy of Sciences USSR

"State of Hematopoiesis After Local Fractional Irradiation. 3. Hematopoiesis in Remote Periods After Irradiation"

Moscow, Meditsinskaya Radiologiya, No 11, 1971, pp 40-44

Abstract: Study of hematopoiesis in locally irradiated and nonirradiated areas of bone marrow in 45 Hodgkin's disease patients 1 to 36 months after conclusion of irradiation of the mediastinum showed the degree of restoration to be directly related to the total absorbed dose. Restoration was complete in all 7 patients who received 2400 rads or less but was absent in 28 of 29 patients who received 3600 to 6300 rads. It was complete in 6 of 9 patients who received 2500 to 3500 rads while aplasia persisted in the other three. This suggests that the intermediate dose range of 3000±500 rads is the threshold or critical level for the repair processes to be stimulated in irradiated bone marrow areas. However, the functional state of nonirradiated bone marrow was normal 6 to 24 months after the end of radiotherapy.

1/1

USSR

UDC 615.849.1.015.4.611-018.5

PAVLOV, V. V., Department of Radiation Therapy of Diseases of the Skin and Hematopoietic Organs, Scientific Research Institute of Medical Radiology, Academy of Medical Sciences USSR

"Hematopoiesis During Local Fractional Irradiation: Change in Peripheral Blood Morphology"

Moscow, Meditsinskaya Radiologiya, No 7, 1971, pp 33-37

Abstract: In 23 of 35 patients with Hodgkin's disease above the diaphragm, nodal irradiation (1,000, 2,000, and 4,000 rad) resulted in a drop in the leukocyte count to 54, 49.5 and 70% of the original level within a week. Meanwhile the red blood indices improved, i.e., the hemoglobin concentration increased from 12.5 to 13.3 g% and the number of erythrocytes rose from 3,860,000 to 4,010,000. But in 12 patients whose peripheral blood indices were abnormally high before treatment (and who showed marked symptoms of intoxication -- elevated body temperature, hidrosis, pruritus, general weakness), the leukocyte count dropped to 33% of the original level by the middle and end of the radiation sessions. Patients with esophageal and lung cancer exhibited a similar relationship between the extent of decrease

USSR

PAVLOV, V. V., Meditsinskaya Radiologiya, No 7, 1971, pp 33-37

in number of leukocytes and the original values. In those with initial leukocytosis, the leukocyte count dropped to 58.8% of the baseline compared with 73.1% in those with normal baseline values by the end of the treatment.

2/2

UNCLASSIFIED PROCESSING DATE--13NOV70

1/2 040

TITLE--ON THE DISTRIBUTION OF FUNCTIONS BETWEEN A HUMAN OPERATOR AND AUTOMATIC COMPONENTS IN CLOSED LOOP CONTROL SYSTEMS -U-

AUTHOR--PAVLOV, V.V.

COUNTRY OF INFO--USSR, FRANCE

SOURCE--AUTOMATIC CONTROL IN SPACE, 3RD I F A C SYMPOSIUM, TOULOUSE, FRANCE, MARCJ 2ND-6TH, 1970

DATE PUBLISHED--------70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, ELECTRONICS AND ELECTRICAL ENGR., NAVIGATION

TOPIC TAGS--LOGIC CIRCUIT, SPACE CONTROL, ELECTRONIC FEEDBACK, MAN MACHINE SYSTEM, AUTOMATIC CONTROL CONFERENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0563 STEP NO--FR/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AT0129749

UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0129749

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER CONSISTS OF THE THREE SECTIONS. 1 FORMALIZATION AND CONSTRUCTION OF THE TENSION CRITERION OF THE OPERATOR'S WORK IN A CLOSED LOOP CONTROL SYSTEM. 2 STATING THE PROBLEMS OF THE OPTIMAL DISTRIBUTION OF FUNCTIONS BETWEEN THE OPERATOR AND AUTOMATIC UNITS. 3 METHODS OF THE OPTIMAL DISTRIBUTION OF FUNCTIONS. A) IN THE GIVEN CONTROL SYSTEMS. B) IN SYNTHETIZING A CONTROL SYSTEM FOR A GIVEN PLANT. THE OPTIMAZATION METHOD IS REALIZED IN TWO CLASSES OF STRATEGIES "SEQUENTIAL" AND "PARALLEL". EXAMPLES ARE GIVEN.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--RETROSTERNAL PLASTY IN CICATRICIAL ESOPHAREAL OBSTRUCTION IN CHILDREN -U-

AUTHOR-(03)-KROLEVETS, I.P., KRIVONOSOV, YU.B., PAVOLV, V.V.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 4, PP 109-111

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIGESTIVE SYSTEM, PEDIATRICS, SMALL INTESTINE, LARGE INTESTINE, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0047 STEP NO--UR/0589/70/104/004/0109/0111

CIRC ACCESSION NO--AP0105146

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 020

CIRC ACCESSION NO--AP0105146

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PAPER THE RESULTS OF 34 RETROSTERNAL PLASTIES IN CICATRICIAL ESOPHAGEAL OBSTRUCTION IN CHILDREN ARE DISCUSSED. THE TECHNIC OF CONSTRUCTION OF A RETROSTERNAL TUNNEL IS DESCRIBED. THE ADVANTAGES AND DESADVANTAGES OF INTESTINAL GRAFTS PRODUCED FROM THE SMALL INTESTINE AND COLON ARE CONSIDERED. IT IS RECOMMENDED TO USE THE SMALL BOWEL AND THE RIGHT COLON FOR ESOPHAGOPLASTY.

UNCLASSIFIED

Acc. Nr.: A70046533

Ref. Code: UR0146

P

UDC 621.317.335.2
621.317.331

USSR

MYAZDRIKOV, O.A., PAVLOV, V.V.

"Technique for Measuring Capacitor Parameters by the Discharge Method"

Sposob izmereniya parametrov kondensatorov po metodu razryada (cf. English above), Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye, 1970, No 1, pp 24-29

4

1/4

Reel/Frame
19781793

AT0046533

Translation:

A technique for measuring capacitance by direct current is examined, which is based on the discharge of a precharged capacitor with the aid of a macrocharge self-oscillatory system.

A different version of the self-oscillatory circuit is proposed for use as a converter of the measured capacity, time constant, and insulation resistance.

Formulas for the measurement and for the systematic errors are derived.

212 di

19781794

USSR UDC 616.155.394-02:615.849.17-089:616.419-089.843

BAYSOGOLOV, G. D., and PAVLOV, V. V., Institute of Medical Radiology, Academy of Medical Sciences USSR

"Automyelotransplantation After Local Fractional Irradiation"

Moscow, Meditsinskaya Radiologiya, No 3, 1972, pp 14-19

Abstract: Eleven patients with Hodgkins disease received autologous bone marrow grafts 1 to 180 days after local fractional irradiation of the mediastinum at doses ranging from 3,700 to 5,100 rad. Study of sternal punctates obtained at various times after transplantation revealed signs of restoration of hematopoiesis in only 5 patients. After 2 months the number of myelokaryocytes increased to 47,000 to 63,000 in 3 and remained at the 11,000 to 20,000 level in 2 with a slight increase in the relative content of immature red and white marrow elements. However, this improvement was temporary and subsequent examination showed all five to be suffering from aplastic bone marrow. Thus, automyelotransplantation after local fractional irradiation at doses above the threshold level (3000±500 rad) does not result in stable restoration of hematopoiesis in exposed areas of bone marrow.

1/1

USSR UDC 632.95

SUVOROV, B. V., KAGARLITSKIY, A. D., KAN, I. I., YEMEL'YANOV, V. L., KUTSHANOV, R. T., and PAVLOV, YE. A.

"A Means of Obtaining 3-Cyanopyridine"

USSR Author's Certificate No 311914, filed 28 Jan 70, published 11 Oct 71 (from Referativnyy Zhurnal -- Khimiya, No 10 (II), 1972, Abstract No 10N604P by T. A. Belyayeva)

Translation: 3-$CNC_5H_4N$ (I) is obtained by oxidative ammonolysis of 2-R-5-R' $C_5H_3N$ (II) (R and R' = alkyl, alkanyl) over a transition-metal catalyst. A mixture of steam and air (300-500 and 100-300 mole, respectively, to each mole of (II) is used as an oxidizing agent. Through a reaction tube (1100X22mm) filled with granulated catalyst ($V_2O_5$ and $TiO_2$ in a 1:16 molar ratios) are passed II (R=Me, R'=CH=$CH_2$), water Air, and $NH_3$ at a rate of 23 g, 950 g, 30001, and 75 g respectively for each liter of catalyst every hour at a temperature of 370° for 10 hours (time of contact: 0.4 seconds). The catalyst is washed with petroleum ether, extracted with $CHCl_3$ and dried over $Na_2SO_4$. I is separated by rectification. The yield is 83.2%, boiling point 100-4°/24, melting point 50.4°. I is used as a plant-growth stimulant in agriculture, and for the production of nicotinamide. 1/1

USSR UDC 576.851.252.097.22.095.57

ZUYEVA, V. S., PAVLOV, Ye. P., and LINEVICH, Yu. G., Department of General Epidemiology, Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"A Modified Method of Eliminating Extrachromosomal Resistance Factors From Staphylococci"

Moscow, Antibiotiki, No 11, 1971, pp 990-995

Abstract: Two cultivated strains of Staphylococcus aureus -- the 8321-1 strain with an intrachromosomal resistance to streptomycin and the 8321-P11 strain with an extrachromosomal resistance to erythromycin -- and a number of wild strains were soaked in Hottinger's broth and incubated either once with 12.5 micrograms of proflavine per ml of the culture medium or 20 times with 6 micrograms of proflavine per ml. After any single treatment, on 6% of the cells with extrachromosomal resistance became sensitive to the antibiotic; they lost their resistance completely after the sixth treatment. This change was due to a transfer of the resistance factor from the cell to the culture medium. Strains with intrachromosomal resistance factors retained their resistance after all treatments. The modified method, which is simpler and faster than the original one, is recommended for epidemiological investigations.
1/1

USSR

UDC 669.293

GAL', V. V., NIKITIN, K. A., PAVLOV, Yu. A., SAVINOV, V. K., and SKACHKOVA, T. M.
Moscow Institute of Steel and Alloys, Institute of High Temperatures of the Academy of Sciences USSR

"Study of the Process of Producing Niobium Carbide By Through Diffusion Saturation of Graphite"

Ordzhonikidze, Tsvetnaya Metallurgiya, No 2, 1973, pp 117-120

Abstract: The process of producing niobium and carbide by through diffusion saturation of graphite was analyzed, proceeding from the derived expression for the time $\tau$ required to realize a through saturation of the grain $\tau = R^2/6 \cdot \beta \cdot D$, where R=initial radius of the grain, D=coefficient of reactive diffusion, and $\beta = \Delta C_1/\Delta C_2$, and $\Delta C_1$=homogeneity range of the growing phase and $\Delta C_2$=difference of solubilities in the growing phase and the saturable grain. The duration of saturation of a graphite granule was found to be less than the through saturation time of

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GAL', V. V., et al., Tsvetnaya Metallurgiya, No 2, 1973, pp 117-120

a metal granule of the same size. Experimental results of niobium carbide production by diffusion saturation of graphite granules in a pseudo-liquefied layer by their interaction with $NbCl_5$ are reported. The temperature dependence T (duration of the experiment 1 hr) of the magnitude of the reaction surface S, referred to a single granule, is discussed by reference to the S/T diagram. The through diffusion saturation of graphite granules (0.6-0.8 mm), when using PG-50 porous graphite and niobium pentachloride, can be realized at temperatures $> 2400^{\circ}$ and $\sim$10 hrs aging. Two figures, one table, two formulas, five bibliographic references.

2/2

PAVLOV, Yu. A.

JPRS 55312
9 MAR 72

UDC 669.094.22:669.296

CHARACTERISTIC FEATURES OF INTERACTION OF ZIRCONIUM DIOXIDE WITH CARBON AT HIGH TEMPERATURES

[Article by Yu. A. Pavlov, A. V. Manukhin, V. F. Melekhin, Moscow Steel and Alloys Institute, Department of High Temperature Materials; Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, Russian, No 5, 1971, submitted 9 February 1971, pp 108-111]

In references [1, 2], a study was made of the interaction of zirconium dioxide with carbon in the temperature range of 2,000-2,600 degrees under different contact conditions between the reagents. It was established that the process of reducing $ZrO_2$ by carbon black with a component ratio according to equation

$$ZrO_2 + 3C = ZrC + 2CO, \qquad (1)$$

takes place predominantly in the kinetic region. On the other hand, the interaction of $ZrO_2$ with graphite with the contact arrangement of the pressed samples of graphite oxide and tablets takes place in the kinetic region only during the initial period, and after a defined isothermal delay, diffusion inhibition takes place, and the process is limited by diffusion of carbon through the layer of the carbide phase formed. The formation of the reaction product film on the graphite sample and the presence of the interaction takes place on the pore walls indicates that the process of the interaction takes place on the surface of the reducing agent. This is caused by transfer of the zirconium to the reducing agent probably in the form of ZrO formed during the process of dissociation of $ZrO_2$ [3, 4]. Accordingly, the particle size of the reducer should play a significant role in changing the limiting stage of the interaction process.

In checking this assumption, experiments were performed with respect to studying the interaction of $ZrO_2$ with graphite powder the particles of which had appreciably greater size (~1 mm) than in the experiments with a finely dispersed reducing agent [1].

USSR UDC 669.28.049-56:669.784

PAVLOV, YU. A., MESHCHERYAKOV, G. YA. and SHEBOLDAYEV, S. B., Moscow Institute of Steel and Alloys

"Interaction of Molybdenum Trioxide With Graphite"

Moscow, Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, No 1, 1972, pp 13-14

Abstract: The object of this study was the effect of the distance between molybdenum trioxide and graphite specimens, the direction and flow rate of inert gas current on the oxide's sublimation rate. The experiment involved specimens of analytically pure molybdenum trioxide, and MG-grade graphite, a quartz reaction vessel, and a resistance tube furnace. The testing temperatures were 400, 500, and 600°C and the reaction time -- 1/2 hr. It is shown that graphite, while adsorbing molybdenum trioxide vapors, reduces their partial pressure on the oxide and promotes sublimation. As the distance between the oxide and graphite specimens is increased, the sublimation rate decreases due to the drop in the concentration gradient of $MoO_3$ vapors from the oxide to the graphite. Here the concentration gradient acts as the motive force for the diffusion of oxide vapors. A decrease in the distance

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PAVLOV, YU. A., et al, Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, No 1, 1972, pp 13-14

between the specimens raises this gradient, facilitating the offtake of vaporized molybdenum trioxide from the specimens, thereby promoting the sublimation rate. Increasing the inert gas flow rate promotes the graphite effect, facilitating vapor offtake and promoting sublimation. (2 illustrations, 2 bibliographic references).

2/2

1/2 037 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--MECHANISM OF THE REACTION OF MOLYBDENUM TRIOXIDE AND TUNGSTEN TRIOXIDE WITH CARBON -U-

AUTHOR-(04)-PAVLOV, YU.A., SHEBOLDAYEV, S.B., MESHCHERYAKOV, G.YA., POLYAKOV, V.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(4), 26-30

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL REACTION MECHANISM, GRAPHITE, TUNGSTEN TRIOXIDE, MOLYBDENUM OXIDE, ELECTRON DIFFRACTION, PHASE COMPOSITION, METAL REDUCTION, OXIDE FILM, CARBON MONOXIDE, PHYSICAL DIFFUSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0807 STEP NO--UR/0148/70/013/004/0026/0030

CIRC ACCESSION NO--AT0132903

UNCLASSIFIED

2/2 037 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132903

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERACTION WAS STUDIED OF METALS WITH GRAPHITE UNDER THE CONDITIONS WHEN THE OXIDE IS BROUGHT IN CONTACT WITH THE REACTION SURFACE ONLY BY THE TRANSFER OF ITS VAPOR PHASE PARTICLES. THE OXIDE PELLETS (45 MM DIAM. AND 10 MM LENGTH) WERE PREPD. BY PRESSING WO SUB3 AND MOO SUB3 POWDERS; THESE WERE FURTHER CALCINED IN AN O STREAM FOR THE PURPOSE OF HOMOGENIZING THE COMPN. TABLETS MADE OF GRAPHITE AG 1500 WERE USED AS THE CARBONACEOUS REDUCER. FOR MOO SUB3, THE TEMP. RANGE INVESTIGATED WAS 380-750DEGREES, FOR WO SUB3 IT WAS 800-1050DEGREES. ELECTRON DIFFRACTION ANALY. SHOWED THAT THE DEPOSITED LAYER IS INDEED MOO SUB3. AT THE TESTING TEMP. OF 640DEGREES, THE FOLLOWING 2 PAHSES FORM: MO SUB2 O SUB3 AND MO SUB4 O SUB11, WITH THE LAYER BOUNDING GRAPHITE CONSISTING ENTIRELY OF THE MO SUB2 O SUB3 PHASE. THE RESULTS INDICATE A REDN. MECHANISM, WITH COUNTER DIFFUSION OF THE O OF THE OXIDE AND THE C TAKING PLACE THROUGH THE LAYER OF THE REACTION PRODUCTS. SINCE MO SUB2 O SUB3 DOES NOT INTERACT WITH C UP TO 750DEGREES, THE SUBSEQUENT REDN. OF MOO SUB3 CAN BE BROUGHT ABOUT BY THE DIFFUSION OF C THROUGH THE MO SUB2 O SUB3 FILM. O OF THE OXIDE CAN ALSO DIFFUSE TO THE CONTACT SURFACE BETWEEN THE OXIDE PHASE AND THE GRAPHITE UNDER THE ACTION OF THE EMERGING CONCN. GRADIENT. THE REDN. PROCESS IS ACCOMPAINED BY AN INCREASE IN THE THICKNESS OF THE REACTION PRODUCT LAYER. IN CASE OF THE REDN. OF WO SUB3, THE INFLUENCE MUST BE CONSIDERED OF CO WHICH FORMS BY THE REGENERATION REACTION, WHICH AT TEMPS. IN EXCESS OF 800DEGREES GOES ON AT A RAPID RATE. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--REACTION OF ZIRCONIUM DIOXIDE WITH CARBON -U-

AUTHOR-(04)-PAVLOV, YU.A., MANUKHIN, A.V., MELEKHIN, V.F., YELYUTIN, V.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(1), 5-8

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ZIRCONIUM DIOXIDE, GRAPHITE, HIGH TEMPERATURE HEAT TREATMENT, ZIRCONIUM CARBIDE, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1546 STEP NO--UR/0148/70/013/001/0005/0008

CIRC ACCESSION NO--AP0125172

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 033

CIRC ACCESSION NO--AP0125172

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZRO SUB2 PELLETS, IN CONTACT WITH GRAPHITE PELLETS WERE HEATED AT 2200-600DEGREES AND THE WT. LOSS OF THE ZRO SUB2 WAS DETD. AS A FUNCTION OF TIME AT A CONST. TEMP. FOR 90 MIN. THE WT. LOSS WAS CORRECTED FOR THE LOSS OBSD. WHEN ZRO SUB2 WAS HEATED ALONE. THE CORRECTED WT. LOSS, DELTA P GRAMS, COULD BE EXPRESSED BY DELTA P EQUALS A PLUS BT PRIMEONEHALF WHERE T IS THE TIME IN MIN AND A EQUALS 0.021 (2200DEGREES) TO 0.039 (2600DEGREES) AND B EQUALS 0.09 (2200DEGREES) TO 0.019 (2600DEGREES). THE ACTIVATION ENERGY WAS 60 KCAL-MOLE. A FILM OF ZRC WAS FORMED ON THE OXIDE SURFACE AND THE FILM THICKNESS, H (CM), CAN BE DERIVED AS A FUNCTION OF DELTA P AS WELL AS OF THE DIFFUSION CONST., D,: H EQUALS 0.262 DELTA P EQUALS (2DT) PRIMEONEHALF. D CAN THUS BE EVALUATED FROM A PLOT OF H VS. T PRIMEONEHALF. THE DIFFUSION OF C THROUGH ZRC WAS 2.5 TIMES 10 PRIME NEGATIVE6 CM PRIME2-SEC AT 2200DEGREES AND 1.3 TIMES 10 PRIME NEGATIVE5 CM PRIME2-SEC AT 2600DEGREES, WITH AN ACTIVATION ENERGY OF 60 KCAL-MOLE.

FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

1/3 010 UNCLASSIFIED PROCESSING DATE--020CT70

TITLE--CRUSTAL THICKNESS ON KAMCHATKA -U-

AUTHOR-(02)-PAVLOV, YU.A., YUNOV, A.YU.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL. 191, NO. 1, 1970, PP. 194-196

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--EARTH CRUST, OCEAN, LAND, MAP, VOLCANO

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0266 STEP NO--UR/0020/70/191/001/0194/0196

CIRC ACCESSION NO--AT0108572

UNCLASSIFIED

2/3 010 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AT0108572

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FIGURE 1 IN THIS ARTICLE IS A MAP OF CURSTAL THICKNESS ON KAMCHATKA SHOWING ISOLINES OF CRUSTAL THICKNESS, ACTIVE AND EXTINCT VOLCANOES. THE MAP IS BASED ON DATA COLLECTED BY THE KAMCHATKA TERRITORIAL GEOLOGICAL ADMINISTRATION. CRUSTAL THICKNESS ON KAMCHATKA VARIES FROM 24 TO 32 KM. THERE IS A MARKED DIFFERENCE IN THICKNESS OF THE CRUST AND RELIEF OF ITS BOTTOM IN THE WESTERN AND EASTERN REGIONS OF THE PENINSULA. IN THE EAST AND SOUTH A THICKNESS FROM 24 TO 30 KM IS CHARACTERISTIC; THE SHARPEST GRADIENTS OF CHANGE ARE OBSERVED IN THESE AREAS. THE ZONE OF EASTERN KAMCHATKAN PENINSULAS FORM A UNIFIED STRUCTURAL ZONE WITH THE LESSER KURILE RIDGE AND THE VITYAZ' RIDGE. THE BOTTOM OF THE CRUST PLUNGES IN A WESTWARD DIRECTION, IN THE CENTRAL PARTS OF KAMCHATKA ATTAINING A DEPTH OF 32-33 KM; WESTWARD IT AGAIN EXPERIENCES IN INSIGNIFICANT SMOOTH RISE. THE CENTRAL ZONE OF MAXIMUM CRUSTAL THICKNESS SPATIALLY CONINCIDES WITH THE CENTRAL KAMCHATKAN RANGE. IN GENERAL, THE PENINSULA IS CHARACTERIZED BY A LONGITUDINAL NNE ZONALITY OF ISODEPTHS OF BOTTOM OF THE CRUST. THERE IS A RISE IN THE CRUST UNDER MOUNTAIN STRUCTURES ON THE EASTERN PENINSULAS AND AT THE SOUTHERN TIP OF KAMCHATKA. THIS IS EVIDENCE OF THE ABSENCE OF "ROOTS" UNDER THEM AND A MARKED DEVIATION FROM ISOSTASY. HOWEVER, "ROOTS" ARE OBSERVED UNDER THE CENTRAL KAMCHATKAN RANGE AND IN PART UNDER THE EASTERN RANGE. NEVERTHELESS, CRUSTAL THICKNESS IS OBVIOUSLY INADEQUATE FOR ISOSTATIC EQUILIBRIUM OF THESE MOUNTAINOUS STRUCTURES.

UNCLASSIFIED

3/3 010 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AT0108572

ABSTRACT/EXTRACT--THE ASYMMETRY OF CRUSTAL STRUCTURE ON KAMCHATKA IS EVIDENTLY DUE TO THE HETEROGENEITY OF THE "OCEANIC" AND "CONTINENTAL" BLOCKS OF THE EARTH'S CRUST, WITH KAMCHATKA BEING SITUATED ON THE CONTACT BETWEEN THE TWO. THE TRANSVERSE ZONALITY IN KAMCHATKAN STRUCTURE IS REFLECTED IN THE RELIEF OF THE BOTTOM OF THE CRUST. A DEPENDENCE BETWEEN THE SPATIAL DISTRIBUTION OF ACTIVE AND EXTINCT VOLCANOES AND CRUSTAL THICKNESS IS DEMONSTRATED.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--PHYSICOCHEMICAL FEATURES OF THE REACTION OF MOLYBDENUM TRIOXIDE AND TUNGSTEN TRIOXIDE WITH GRAPHITE -U-

AUTHOR-(05)-YELYUTIN, V.P., PAVLOV, YU.A., SHEBOLADEV, S.B., POLYAKOV, V.P., MESHCHERYAKOV, G.YA.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1), 73-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--TUNGSTEN COMPOUND, METAL OXIDE, GRAPHITE, CHEMICAL REACTION, MOLYBDENUM OXIDE, THERMAL DIFFUSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1085 STEP NO--UR/0020/70/191/001/0073/0075

CIRC ACCESSION NO--AT0119944

UNCLASSIFIED

2/2 034 . UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0119944

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MOO SUB3 AND WO SUB3 WERE HEATED UNDER VACUUM AT VARIOUS TEMPS. WITH GRAPHITE. A REACTION OCCURRED ON THE SURFACE OF THE GRAPHITE GIVING OXIDE LAYERS CONTG. MO SUB2 O SUB3 AND MO SUB4 O SUB11 (410-640DEGREES) AND W SUB18 O SUB49, W SUB20 O SUB58, AND W (750-1050DEGREES). THE COMPN. OF THE OXIDE LAYERS AND THE DISTRIBUTION OF W AND MO ON THE GRAPHITE SURFACE WERE DETD. THE THICKNESS OF THE OXIDE LAYERS WAS DETD. AT VARIOUS TEMPS. AND REACTION TIMES (1-12 HR). AT LOWER TEMP. THE FILMS WERE VERY THIN. AT 440DEGREES AND 510DEGREES, MOO SUB3 VAPORS WERE REDUCED TO MO SUB2 O SUB3. AT 640DEGREES THE RATE OF EVAPN. OF MOO SUB3 AND THE NO. OF PARTICLES ON THE GRAPHITE SHARPLY INCREASED. THE FORMATION OF A LAYER OF MO SUB2 O SUB3 HAMPERED FURTHER REDN. OF MOO SUB3 AND LED TO THE FORMATION OF MO SUB4 O SUB11, PROBABLY BY REACTION OF MO SUB2 O SUB3 WITH CO FORMED IN THE REACTION. AT HIGH TEMP. (1050DEGREES) MO SUB2 O SUB3 REACTED WITH GRAPHITE TO GIVE MOC. THE REACTION OF WO SUB3 WITH GRAPHITE GAVE A NONHOMOGENEOUS OXIDE LAYER CONTG. W METAL. AT 900-1050DEGREES A HEAVY LAYER OF W SUB20 O SUB58 FORMED. DIFFUSION PROCESSES PLAY AN IMPORTANT PART IN THESE REACTIONS. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--REACTION OF VANADIUM PENTOXIDE, MOLYBDENUM TRIOXIDE, AND TUNGSTEN TRIOXIDE WITH CARBON AND CARBON MONOXIDE -U-

AUTHOR--YELYUTIN, V.P., PAVLOV, YU.A., POLYAKOV, V.P., SHEBOLDAYEV, S.B.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 37-40

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--VANADIUM PENTOXIDE, MOLYBDENUM OXIDE, TUNGSTEN COMPOUND, CARBON, CHEMICAL REDUCTION, METAL OXIDE, CARBON MONOXIDE, ISOTOPE EXCHANGE, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1981/0981 STEP NO--UR/0363/70/006/001/0037/0040

CIRC ACCESSION NO--AP0050973

UNCLASSIFIED

2/2 059 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0050937

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CERAMIC AND METALLIC COATINGS AFFECT THE DECREMENT OF OSCILLATIONS AND CORRESPONDINGLY THE HIGH TEMP. STRENGTH OF REFRACTORY ALLOYS SUBJECTED TO VIBRATION. TWO STEEL GRADES, AN AUSTENITIC AND A MEDIUM ALLOYED STEEL WITH A FERRITIC BASE, HAVE BEEN INVESTIGATED IN THE AS CAST STATE TO DET. THE DECREMENT OF OSCILLATIONS DURING FLEXURAL VIBRATION. SPECIMENS HAVE BEEN COATED WITH (1) A CERMET LAYER OF CR-NI-SI-B, (2) SILICATE ENAMEL, (3) ELECTROLESS NI. THE ENAMEL COATING GIVES A HIGHER DECREMENT COMPARED WITH AN UNCOATED SPECIMEN ONLY AT TEMPS. GREATER THAN 600DEGREES. IN THE OTHER 2 CASES THE SAME EFFECT APPEARS EARLIER AND IS MORE IMPORTANT; THE PRESENCE OF A NI COATING AT 550-600DEGREES GIVES A DECREMENT 1.5-2 TIMES HIGHER.

UNCLASSIFIED

Graphite

USSR UDC 669.296:669.111.2:532.7:532.692

YELYUTIN, V. P., PAVLOV, YU. A., MANUKHIN, A. V., and MELEKHIN, V. F.,
Moscow Institute of Steel and Alloys

"Interaction of Zirconium Dioxide With Carbon"

Moscow, IVUZ. Chernaya Metallurgiya, No 1, 1970, pp 5-8

Translation: The nature of the interaction of zirconium dioxide with graphite in the temperature interval 2200-2600°C, at contact arrangement of the specimens, is considered. Thermogravimetric methods are used to obtain the kinetic curves which characterize the interaction process of oxide with graphite and, separately, the processes taking place on the surface of the oxide specimen in the absence of graphite. Calculations are made of changes of the overall decrease in the mass of oxide and graphite specimens, dependent on the interaction of $ZrO_2$ with graphite in the contact zone, with the isothermic lag. The dependence of the thickness of the carbide layer on the time lag and the coefficients of carbon diffusion through ZRC at specific temperatures are calculated according to the diminishing mass of specimens. It appears that the interaction takes place due to oxide conversion of the gaseous phase followed by graphite deposition on zirconium monoxide. After the formation of carbide, the process of its interaction with ZRO is limited by carbon diffusion through a layer of ZrC.
1/1

USSR UDC 535.2

KORNEYEV, N. YE., and PAVLOV, YU. I., Institute of High Temperatures, Academy of Sciences USSR, Moscow

"Generation of Powerful, Short, Highly-Coherent Optical Pulses with a Diffraction-Limited Divergence"

Moscow, Doklady Akademii Nauk SSR, Tekhnicheskaya Fizika, Vol 190, No 3, 70, pp 572-573

Abstract: This is a continuation of an earlier article by the authors in an effort to obtain a highly-coherent ruby-laser emission on the order of several hundred megawatt. The proposed system consists of four ruby lasers, each with a 50-cm long resonator, all coupled in series for an overall resonator length of 2 m. The optical decoupling was accomplished by saturable absorbers. The following rod series were used: first rod 7x100 mm, second 8x100 mm, third and fourth 10x100 mm each. Each rod was pumped by two IFP-2000 flash lamps in a 2-ellipse reflector filled with a liquid. The entire system was aligned by means of an OKG-13 gas laser with an element accuracy not less than 10 arc sec. The total generation threshold of all four rods was 2.4-3.5kj. A single

USSR

KORNEYEV, N. YE., PAVLOV, YU. I., Doklady Akademii Nauk SSR, Tekhnicheskaya Fizika, Vol 190, No 3, 70, pp 572-573

(axial) mode only was generated when the pumping was 1.6 times above the threshold, other equidistant modes occurring at higher pump energies with a $\delta\nu = 0.01\ cm^{-1}$ separation. When one longitudinal or one transverse mode was generated, a smooth 2 monosec single pulse was produced. The energy was measured calorimetrically, the maximum being 1j which corresponds to a power of 500 Mw. Subsequent attempts to increase the power were unsuccessful due to rod failure.

USSR

UDC: 536.532

AMETISTOV, YE. V. KLIMENKO, A. V. and PAVLOV, YU. M.

"Method of Embedding Thermocouples Into the Surface of Experimental Metal Areas for Nonstationary Temperature Measurement"

Tr. Mosk. energ. in-ta (Transactions of Moscow Power Institute) 1972, vyp 104, pp 15-19 (from Referativnyy Zhurnal-Metrologiya i Izmeritel'naya Tekhnika, No 8, 1972, Abstract No 8.32.868 by V.S.K.)

Translation: When investigating the local temperature variations of metal heating surface under a growing bubble of steam, it should be taken into account that the time of steam bubble growth is measured in milliseconds and its diameter does not exceed several millimeters. The basic problem in conducting such measurements is the need to create special, sufficiently reliable temperature pickups. Two newly developed methods are described of embedding 5-10 copper-constantan thermocouples with reliable silicon-organic insulation into the surface of experimental areas of about 40 mm diameter, practically any thickness and 3-4 mm length.

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USSR

AMETISTOV, Ye. V., et al., Tr. Mosk. energ. in-ta, 1972, vyp 104, pp 15-19

In order to assure reliability of contact silver coating about 100-200 A thick is deposited by vacuum dust-blasting on the ends of microelectrodes and on the surface of the experimental area. It is pointed out that the use of such small-diameter electrodes requires individual calibration of thermocouples (1 illustration, 4 references).

2/2

USSR

UDC 621.771.8:669.14.018.3:621.014.5

YAKSHINA, O. K., PERSHINA, N. F., and PAVLOV, YU. M.

"Influence of Cyclical Heating on Strength of Adhesion of Bimetal Layers"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 170-172

Translation: The capacity of bimetals with different coefficients of thermal expansion of layers to operate under cyclical heating conditions was studied. The bimetal specimens included: St3+OKh13; St3+OKh17T; St3+Kh25T; St3+Kh18N10T, and St3+Kh23N28M3D3T, tested by periodic heating to 500 and 400°C with subsequent cooling to room temperature.

The results of the tests show the possibility of using these bimetals for long service with cyclical temperature change. 2 figures; 2 tables.

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USSR UDC 534.84

PAVLOV, YU. M.

"Determining the Levels of Sound Pressure in Work Areas of Limited Size"

Tr. Giproniiaviaproma (Works of the State Scientific Research and Planning Institute of the Aviation Industry), 1970, No 7, pp 208-223 (from RZh-Fizika, No 12(II), Dec 70, Abstract No 12Zh853)

Translation: The results of an experimental test of methods for computing the levels of sound pressure in work areas in places of small size containing various types of noisy equipment are presented. A method is given for calculating the sound pressure level in the zone of direct and reflected sound, starting from known sound intensity levels of the noise sources. A position constant (B) necessary for the calculations was determined for an acoustically undeveloped location on the basis of a graph or was calculated in terms of the reverberation time ; for areas with acoustical treatment it was determined by the first method and by calculation in terms of the reverberation coefficient of sound absorption.

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USSR

PAVLOV, YU. M., Tr. Gipronііaviaproma, 1970, No 7, pp 208-223

It was established that the proposed method makes it possible to calculate the sound pressure level in work areas located both in the zone of reflected sound and close to the noisy equipment in areas of volume up to 800 $m^3$ with sufficient accuracy. In a work area located in the zone of reflected sound the use of sound absorbing linings lowers the sound level up to 10 db; and in the zone of direct sound (at a distance of 0.5 m from the source up to 5 db. The application of screens and bulk sound absorbers is recommended in the latter case for a further reduction in noise. E. I. Denisov.

2/2

USSR

UDC 541.13

PAVLOV, Yu. V., FOMICHEVA, M. G., MISHUSTIN, A. I., and ALPATOVA, N. M., Institute of Electrochemistry, Academy of Sciences, USSR, Moscow State University Imeni M. V. Lomonosov

"Dynamic Polarization of Hexamethylphosphoric Triamide Protons by Electrochemically Generated Solvated Electrons"

Moscow, Elektrokhimiya, Vol 9, No 4, Apr 73, pp 541-543

Abstract: Existence of solvated electrons has been suspected on the basis of some NMR data. In this study an attempt was made to use dynamic polarization to identify these electrons. Dynamic polarization is based on changing the intensity of NMR signals lightly connected with the unpaired electrons, by saturating the NMR transitions with UHF power. The study was carried out on hexamethylphosphoric triamide in LiCl and NaBr solutions. On the basis of the data from dynamic polarization, spectra and relaxation times, a conclusion was reached that in the system under investigation a very weak intermolecular superfine scale interaction takes place, indicating the presence of solvated electrons rather than the $\{[(CH_3)_2N]_3PO\}^-$ type anion radicals.

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Pesticides

USSR UDC 631.850.13

IVANOV, R. N., PAVLOVA, A. I., TUGOVA, N. N., and SATYBALDYYEV, T., Institute of Chemistry, Academy of Sciences Uzbek SSR

"The Effect of the Moisture Content of Ammophos Granules on Their Strength"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, Vol 17, No 3, 1973, pp 70-72

Abstract: The mechanical strength of ammophos granules with a diameter of 1.5-6.0 mm in relation to their moisture content was investigated. The ammophos granules were produced by the liquified solids method. The moisture content varied in the 0,5-7.0% range. The strength of the granules (their resistance to deformation) decreased with their size because of decreasing density and also with the moisture content. Mathematical formulas that describe the relations established were derived. The work was carried out under the direction of M. N. Nabiyev, Member of the Academy of Sciences Uzbek SSR.

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USSR

UDC 631.89+632

IVANOV, R. N., SEMENOVA, L. N., PAVLOVA, A. I., CHUMAKOV, F. P., Chemistry Institute of the Uzbek SSR Academy of Sciences

"Properties of Ammophos Granules with a Dalapone Shell"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal No 3, 1972, pp 5-6

Abstract: An apparatus with a fluidized bed was used to obtain a combined fertilizer made of ammophos with a 0.1-0.2 mm thick shell of the herbicide, dalapone. The structural and operating characteristics of the unit with an output capacity of 1,500 kg/hour with a 1 $m^2$ screen are described. The hygroscopic point of the fertilizers determined by the exsiccator method [N. Ye. Pestov, et al., ZhKhP, No 12, 1951] corresponded to 59-61%. In all cases ammophos with dalapone absorbed moisture faster than pure ammaphos. The results of field testing by the Scientific Research Institute of Plant Protection demonstrate that the compound does not lower the germination of cotton seed but suppresses weeds. The cotton harvest was improved by 2-2.5 centners/hectare.

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USSR

UDC 627.45:624.131.52

SINYAVSKAYA, V.M., PAVLOVA, E.YE.

"The Influence of Periodic Shifts of the Lock Wall Upon the Pressure of the Fill Earth and the Stresses in the Framework"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 3, 1971, pp 28-33

Abstract: Between 1959 and 1969 the Volgograd section of the Scientific Research Department of the All-Union Planning, Surveying, and Scientific Research Institute imeni S.Ya. Zhuk has been conducting integrated full-scale research upon the wall of the upper chamber of the Volgograd Lock, which had commenced while the lock was being built. By now, sufficient observation data have accumulated for the lock under consideration to be regarded as a system of interacting elements (chamber wall - filling soil). The article gives quantitative characteristics of the wall shifts, and a classification of them: changes in the time that the soil pressure and the stresses of the framework are under the influence of these shifts, are described. 3 figures, 3 tables, 6 bibliographic entries.

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USSR

UDC 620.197.6

PAVLOVA, F. S., GERASIMOV, V. V., and YERMOLOVA, T. A.

"Electrochemical Behavior of Type OKh18N10T Steel With Aluminum Coating"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr, 1971, pp 187-189.

Abstract: The effectiveness of a coating of 0.3-mm type AD-1 Aluminum on OKh18N10T steel for increasing corrosion resistance in a cold 0.001 n solution of NaCl was tested. The experiments showed that the effectiveness of electrochemical protection increases with increasing solution temperature, and the electrode potential of the coating decreases. The data produced indicate that lack of aluminum coating over sectors up to 3 $Cm^2$ in area is not dangerous from the standpoint of development of corrosion cracking, since the nearest aluminum layer provides cathode protection for the steel under these conditions.

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Coatings

UDC 620.197.6

USSR

PAVLOVA, F. S., GERASIMOV, V. V., and YERMOLOVA, T. A.

"Electrochemical Behavior of Type OKh18N10T Steel With Aluminum Coating"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr, 1971, pp 187-189.

Abstract: The effectiveness of a coating of 0.3-mm type AD-1 Aluminum on OKh18N10T steel for increasing corrosion resistance in a cold 0.001 n solution of NaCl was tested. The experiments showed that the effectiveness of electrochemical protection increases with increasing solution temperature, and the electrode potential of the coating decreases. The data produced indicate that lack of aluminum coating over sectors up to 3 $Cm^2$ in area is not dangerous from the standpoint of development of corrosion cracking, since the nearest aluminum layer provides cathode protection for the steel under these conditions.

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USSR

UDC: 620.197.620.193

GERASIMOV, V. V., PAVLOVA, F. S., KUZNETSOVA, V. N., and BRATCHIKOV, V. N.

"Effect of Protective Metallic Coatings on the Corrosion Cracking of Stainless Steel"

Moscow, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 420-424

Abstract: In a steam-air medium at about 100°C, OKh18N10T steel may become subject to corrosion cracking. The objective of this study was to determine an optimum coating providing long-term protection of OKh18N10T steel against corrosion cracking at high temperatures in steam and steam-air media containing chlorides. The coatings tested were aluminum, nichrome, and alumel. Specimens spray-coated with aluminum exhibited the highest electrochemical protection of the steel. Annealing the aluminum coating at 510, 700, and 870°C increases corrosion cracking resistance at least twofold. However, a heavy (over 3 microns) and brittle layer of intermetallic compounds which is formed in the process of heat treating the aluminum coating at temperatures above the melting point of aluminum appears to fail even at minor deformations. The cracks which result in the aluminum layer impair the protective properties of the coating against those provided by a 510°C annealing.

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USSR

UDC: 620.193.2

PAVLOVA, E. S., GERASIMOV, V. V., and YERMOLOVA, T. A.

"Behavior of Protective Metal Coatings in Fresh Water"

Moscow, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 622-625

Abstract: There is rather limited information on the corrosion and electrochemical behavior of single- and multi-layer metal coatings in an aqueous medium of a given composition. This study involved 0Kh18N10T steel, coated with nickel (100 microns), chromium (250 microns), cadmium (60 microns). The corrosion rate was determined by loss of weight. The high corrosion resistance of chromium and electrolytic nickel derives from the fact that their stationary potentials are in the passive region; for phosphorus-containing nickel and for cadmium the potentials are in the active dissolution region. The cadmium coating in cold water electrochemically protects the steel base. An increase in temperature alters the stationary potentials of both cadmium and type-20 steel: the steel sometimes becomes the anode. Chromium, owing to

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USSR

PAVLOVA, F. S., et al, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 622-625

its high passivation capacity, is indispensable as the upper layer of multi-layer coatings of Cu-Ni-Cr, Ni-Ni-Cr. Cathodic coatings were found to protect steel, provided the latter has no scratches, pores, and nicks. In electrochemical terms, a 60-micron coating comprising two layers of nickel and an upper chromium layer was found to protect steel against corrosion for 8000 hours of testing.

UDC 632.951:595.42

USSR

MANINA, L. I., and PAVLOVA, G. A., Scientific Research Institute of Plant Protection, Tashkent

"Effect of the Preparation Acar-338 on the Spider Mite and Its Predators"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 6, 1971, pp 24-26

Abstract: As part of a search for chemicals which are of low toxicity for spider mite predators (stethorus and aphis lion), laboratory and field tests were conducted in 1969 on the acaricides acar-338 (25-percent wettable chlorobenzilate powder) and Rogor. In the laboratory experiments cotton leaves inhabited by larvae, chrysalises, eggs and adults of stethorus were immersed for 30 sec in aqueous emulsions or suspensions of the acaricides in a concentration of 0.00039-0.025 percent a.i. The field experiments were staged at the "Pakhtakor" Kolkhoz, Bagdadskiy Rayon (Ferganskaya Oblast) and the Kolkhoz imeni Lenin, Papsiy Rayon (Namanganskaya Oblast). It was found that acar-338 is 3.4 times less toxic than Rogor for stethorus eggs, 1.2 times for larvae, 3.8 times for chrysalises, and 19.2 times for mites. It is recommended that the chemical be used at a dose of 1 kg/ha in June and the beginning of July, and at a dose of 2 kg/ha in the middle of July. Working fluid consumption is 600-800 l/ha.

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1/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--MECHANISM OF THE CATALYTIC DECOMPOSITION OF HYDROGEN PEROXIDE ON THE SURFACE OF METALS. II. BEHAVIOR OF HYDROGEN PEROXIDE ON GOLD AND

AUTHOR-(02)-BERENBLIT, V.M., PAVLOVA, G.L.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(5), 1057-61

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROGEN PEROXIDE, GOLD ALLOY, NICKEL ALLOY, PLATINUM ALLOY, CATALYTIC DECOMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1217 STEP NO--UR/0080/70/043/005/1057/1061

CIRC ACCESSION NO--AP0138232
UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138232

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DECOMPN. OF H SUB2 O SUB2 ON A PT SURFACE FOLLOWS AN ELECTROCHEM. MECHANISM AS A RESULT OF MUTUAL COMPENSATION OF ITS OXION. AND REDN. THE DECOMPN. OF H SUB2 O SUB2 WAS EXTENDED TO SURFACES OF AU AND NI. THE SAME EXPTL. PROCEDURE WAS FOLLOWED TO OBTAIN THE POLARIZATION AND KINETIC CURVES. H SUB2 O SUB2 (30PERCENT) WAS USED AT VARIOUS PH VALUES (BUFFER SOLNS.). AS IN THE CASE OF PT, THE RATE OF DECOMP. OF H SUB2 O SUB2 ON AU DECREASES AT LOWER PH VALUES AND AT INCREASED DURATION OF EXPT. CORRESPONDINGLY, THE CHARACTER OF POLARIZATION CURVES CHANGES: THE OVERVOLTAGE OF ANODIC AND CATHODIC PROCESSES INCREASES WITH TIME. THE DECOMPN. OF H SUB2 O SUB2 ON AU FOLLOWS THE ELECTROCHEM. MECHANISM ENTIRELY ANALOGOUS TO THAT ON PT. THE DIFFERENCE IS LIMITED TO SLOWER RATES OF BOTH PARTIAL REACTIONS AND THE TOTAL PROCESS. CONTRARY TO PT AND AU, METALLIC NI DOES NOT CATALYZE THE DECOMPN. OF H SUB2 O SUB2 EVEN IN ALK. MEDIA. THERE ARE INDICATIONS THAT THE ABSENCE OF CATALYTIC DECOMPN. OF H SUB2 O SUB2 ON NI IS CONNECTED WITH THE IMPOSSIBILITY OF OCCURRENCE OF A CATHODIC PROCESS ON THE PASSIVATED SURFACE OF THE METAL. THE DECOMPN. OF H SUB2 O SUB2 ON ACTIVE NI DOES OCCUR, BUT BECAUSE OF ITS REDN. WHICH IS COMPENSATED FOR BY THE CURRENT OF DISSOLN. OF THE ACTIVE METAL AND NOT BY OXIDE. FACILITY: GOS. INST. PRIKL. KHIM., LENINGRAD, USSR.

UNCLASSIFIED

Acc. Nr: AP0049100 Abstracting Service: CHEMICAL ABST. 5/70 P Ref. Code: UR 0080

104417u Mechanism of the catalytic decomposition of hydrogen peroxide on the surfaces of metals. I. Catalytic decomposition of hydrogen peroxide on platinum. Berenblit, V. M.; Pavlova, G. I. (Gos. Inst. Prikl. Khim., Leningrad, USSR). *Zh. Prikl. Khim. (Leningrad)* 1970, 43(1), 51–8 (Russ). Several mechanisms have been proposed in the literature for heterogeneous catalytic decompn. of $H_2O_2$ on metals. The most plausible appears to be the electrochem. (donor-acceptor) mechanism assuming that reactions of oxidn. and redn. of $H_2O_2$ take place concurrently on the metal surface: (*a*) $H_2O_2 + 2H^+ + 2e \rightarrow 2H_2O$, (*b*) $H_2O_2 - 2e \rightarrow O_2 + 2H^+$. The catalytic role of metal is fulfilled by facilitating the exchange of electrons between $H_2O_2$ mols. In this study, confirmation of this electrochem. mechanism was sought in decompn. of $H_2O_2$ on smooth Pt. Polarization curves were obtained by galvanostatic method at 25°; Pt disks with 1.0 or 0.1 $cm^2$ area were used; the concn. of $H_2O_2$ was 0.3–90%. A decrease in the catalytic activity of Pt is accompanied by an increase of the overvoltage of electrode reactions. The rate of heterogeneous decompn. of $H_2O_2$ depended directly on the current strength (in the absence of polarization) in a broad range of pH and concn. The effect of surface-active anions on the rate of catalytic decompn. and on rates of electrode reactions of oxidn.

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REEL/FRAME
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and redn. was examd. In conformity with requirements of the delayed discharge theory, anions $NO_2^-$, $ClO_4^-$, and $SO_4^{2-}$ increase the overvoltage of redn. of $H_2O_2$ (cathode). Anions $Cl^-$ and $SCN^-$ affect both electrode reactions, apparently by acting as poisons for active sites on surface. All anions, particularly $Cl^-$ and $SCN^-$, decrease the rate of heterogeneous decompn. of $H_2O_2$ on Pt. In general, decompn. of $H_2O_2$ on the surface of smooth Pt arises through compensation of currents of oxidn. and redn., without significant participation of any chain processes. The obsd. stationary potential is a compromise potential between cathodic and anodic reactions. M. Ladacki

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19800906

USSR

UDC 632.95

PARSHUTIN, S. N., STONOV, L. D., ZABALUYEV, I. T., BATYROVA, N. SH., GALIFANOV, G. G., MULLIYEV, K. M., PAVLOVA, G. N., SHCGAN, S. M., KHRIPKO, T. V., KUR'YANOV, V. A., and KHRIPKO, V. G.

"Control of Overgrowth of Sewers and Drains in Turkmeniya"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 225-241 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N533 by T. A. Belyayeva)

Translation: The article compares the effectiveness and profitability of mechanical, manual, thermal biological and chemical methods of removing vegetation from drains. Data are given on results of herbicide tests and applications. To kill reeds, cattails and other weeds in sewers during the second and subsequent years of service, dalapon shows the greatest promise in doses of 24-30 kg/ha with the addition of wetting agent OP-7 or OP-10.

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USSR UDC: 621.371.332.3:551.463.7:538.3

BABAYEV, A. B., PAVLOVA, I. A., PRAKHOV, V. P.

"Diagrams of Backscattering From the Surface of the Sea"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute), 1972, vyp. 110, pp 77-79 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8G55)

Translation: The paper presents the results of experimental determination of the diagram of backscattering for the surface of the sea. The work was done in the Caspian Sea region. The results show the effect of the characteristics of waving of the sea (widening of the main lobe of the diagram with an increase in the height of the sea wave). Three illustrations. N. S.

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USSR UDC 581.198:632.951

CHKANIKOV, D. I., MAKEYEV, A. M., PAVLOVA, N. N., and DUBOVOY, V. P., All-Union Scientific Research Institute of Phytopathology, Bol'shiye Vyazemy Moscow Oblast

"N-(2,4-Dichlorophenoxyacetyl)-L-Glutamic Acid, A New Metabolite of 2,4-D"

Moscow, Fiziologiya Rasteniy, Vol 19, Vyp 2, Mar/Apr 72, pp 436-442

Abstract: A new metabolite, N-(2,4-dichlorophenoxyacetyl)-L-glutamic acid, was separated by paper chromatography along with N-(2,4-dichlorophenoxyacetyl)-L-aspartic acid from extracts of soya bean plants treated with 2,4-D-2-$^{14}$C. These conjugates of 2,4-D had the same mobility during paper chromatography in different solvents (20 were used). They were separated by gas-liquid chromatography. Both of these compounds were identified by UV, IR, NMR, and mass spectra. The compounds underwent complete hydrolysis in 6 N HCl at 100° in 2 hr yielding 2,4-D and equimolar amounts of aspartic and glutamic acids. Amino acid derivatives of 2,4-D were accumulated mainly in the treated leaves of soya and, presumably, were not transferred into other organs. The amino acid derivatives of 2,4-D were absent in the phloem sieve tubes of aphids feeding on soya bean plants treated with 2,4-D. It is assumed that the production of amino acid derivatives is one of the ways in which the soya leaf tissues immobilize the 2,4-D. 1/1

USSR

UDC 576.852.215.086.3

DASHKOVA, N. F. and PAVLOVA, I. B., Vladivostok Institute of Epidemiology and Microbiology and Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Electron Microscope Study of the Ultrastructure of Pasteurella pseudotuberculosis of Varying Degrees of Virulence"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 139-141

Abstract: Electron microscope study of ultrathin sections of three Pasteurella pseudotuberculosis strains -- the virulent No 25, completely avirulent No 85/a, and partially attenuated No 26 -- revealed many features typical of other gram-negative bacteria. The cells of the virulent strain were round or elongated with a 3-layer wall, 3-layer cytoplasmatic membrane, barely discernible nucleoid, numerous granules the size of ribosomes, and osmiophilic inclusions of unknown nature. The cells of the partially attenuated strain were like the above except that the cytoplasm was less compact and the nucleoid could be readily differentiated, and some were surrounded by a layer of capsular substance. The cells of the avirulent strain were almost twice as long as those of the other two strains. The

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DASHKOVA, N. F. and PAVLOVA, I. B., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 139-141

walls were tortuous and somewhat attenuated. No osmiophilic inclusions could be found and the nucleoid could be differentiated only with difficulty. Like most gram-negative bacteria, the cells of all three strains divided by simple abstriction to form daughter cells of the same size.

2/2

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SUBMICROSCOPIC STRUCTURE OF STAPHYLOCOCCUS IN THE PROCESS OF TOXINOGENESIS -U-

AUTHOR-(02)-PAVLOVA, I.B., RATGAUZ, G.L.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 3, PP 85-88

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STAPHYLOCOCCUS MORPHOLOGY, CYLOPLASM, BACTERIAL TOXIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1475 STEP NO--UR/0016/70/000/003/0085/0088

CIRC ACCESSION NO--AP0109535

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 017

CIRC ACCESSION NO--AP0109535

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED THE SUBMICROSCOPIC STRUCTURE OF HIGHLY TOXIGENIC STRAINS OF STAPHYLOCOCCUS AND OF THOSE WITH LOW TOXIGENICITY. IT WAS SHOWN THAT MORPHOLOGICAL DIFFERENCES WERE ALSO PRESENT BETWEEN THE STRAINS WHICH DIFFERED FUNCTIONALLY; THESE MORPHOLOGICAL DIFFERENCES WERE EXPRESSED IN THE FORMATION UNDER THE CELLULAR WALL OF SLITS AND LACUNAE FILLED WITH AMORPHOUS MATERIAL OF LOW ELECTRON OPTIC DENSITY, AS WELL AS IN INTENSIVE DEVELOPMENT OF INTRACYTOPLASMATIC MEMBRANOUS STRUCTURES IN THE PERIPHERAL AREAS OF THE CELLS OF A HIGHLY TOXIGENIC STRAIN. INTRACYTOPLASMATIC MEMBRANOUS STRUCTURES WERE OFTEN UNASSOCIATED WITH FORMATION OF CROSS SEPTI. DISCHARGE OF THE TOXIN INTO THE MEDIUM DURING THE TOXIN FORMATION WAS NOT ACCOMPANIED BY PHENOMENA OF GENERAL LYSIS.

UNCLASSIFIED

USSR

UDC: 576.8.095.5:575.116.7

PAVLOVA, I.B. and RATGAUZ, G.L., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Sciences USSR, and Institute of Experimental Biology, Academy of Medical Sciences USSR

"The Submicroscopic Structure of Staphylococci During Toxin Formation"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 3, 1970, pp 85-88

Abstract: Electron microscope studies of a highly toxigenic (No. 5) and a weakly toxigenic (No. 1464) Staphylococcus strains were conducted to determine whether the functional differences between the strains reflected differences in the ultrastructure. Six-day-old and especially two-and four-day old cultures of the highly toxigenic strain were characterized by a partial separation of the cytoplasmatic membrane from the cell wall, and formation of cracks and lacunae filled with a substance of low electron density. There were also well-developed membranous structures along the periphery of the cells. On the other hand, in most of the cells of the weakly toxigenic strain at the same stage of cultivation, a fibrillar substance uniformly distributed on the surface of the cell wall could be seen. Moreover, the partial separation of the cytoplasmatic membrane, presence of cracks and lacunae and membranous structures along the periphery observed in the toxigenic strain were not evident in these cells.

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1/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--MODIFICATION OF PROPERTIES OF STAPHYLOCOCCI AFTER REPEATED GAMMA IRRADIATION -U-

AUTHOR-(04)-TUMANYAN, M.A., PERSHINA, Z.G., PAVLOVA, I.B., SAMOYLENKO, I.I.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA 1970, VOL 39, NR 1, PP 112-117

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STAPHYLOCOCCUS AUREUS, GAMMA RADIATION, DNA, RADIATION BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1442 STEP NO--UR/0220/70/039/001/0112/0117

CIRC ACCESSION NO--AP0109502

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0109502

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REPEATED GAMMA IRRADIATION WITH SUBBACTERICIDAL DOSES OF STAPHYLOCOCCUS AUREUS RESULTED IN MODIFICATION OF ITS CULTURAL, BIOCHEMICAL AND OTHER PROPERTIES. ULTRA FINE CELL STRUCTURE CHANGED AND CELL RADIORESISTANCE INCREASED. A FALL IN ENZYME ACTIVITY, AN IMPAIRMENT OF HEMOLYTIC PROPERTIES AND A LOSS OF VIRULENCE CAUSED SAPROPHYTIZATION OF STAPHYLOCOCCI. A COMPARISON OF ULTRA FINE STRUCTURE IN THE PARENT STAPHYLOCOCCI AND IN THOSE WITH INCREASED RADIORESISTANCE REVEALED ENLARGED (2-2.5 FOLD) CELL DIMENSIONS IN THE IRRADIATED CULTURES, A DISTRUBANCE OF CELL DIVISION AND A DISAPPEARANCE OF MEMBRANE STRUCTURES TYPICAL FOR THE PARENT CULTURE. DESPITE THE CONSIDERABLE CHANGES IN STAPHYLOCOCCI WITH INCREASED RADIORESISTANCE, THEIR DNA BASE RATIO WAS IDENTIFICAL TO THAT OF THE PARENT BACTERIA.

UNCLASSIFIED

USSR UDC 576.851.25.2.095.11

TUMANYAN, M. A., PERSHINA, Z. G., PAVLOVA, I. B., and SAMOYLENKO, I. I., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR

"Modification of Properties of Staphylococci After Repeated Gamma-Irradiation"

Moscow, Mikrobiologiya, Vol 39, No 1, Jan/Feb 70, pp 112-117

Abstract: A study was made of the possibility of obtaining Staphylococci with increased radioresistance after repeated gamma-irradiation. Staphylococcus aureus strains 73 and V-445 were used. Experiments revealed that repeated gamma-irradiation of Staphylococcus aureus with sub-bactericidal doses resulted in modification of cultural, biochemical and other properties. Ultrafine cell structure changed and cell radioresistance increased. A drop in enzyme activity, an impairment of hemolytic properties, and a loss of virulence caused saprophytization of the Staphylococci. A comparison of ultrafine structure in the parent Staphylococci and strains with increased radioresistance revealed enlarged (2-2.5 fold) cell dimensions in the irradiated cultures, disruption of cell division, and the dis-

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202410001-9"

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TUMANYAN, M. A., et al., Moscow, Mikrobiologiya, Vol 39, No 1, Jan/Feb 70, pp 112-117

appearance of membrane structures typical of the parent culture. Despite the considerable changes in staphylococci with increased radioresistance, their DNA base ratio was identical to that of the initial strain.

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USSR UDC 576.851.553.097.29.074

PAVLOVA, I. B., and BULATOVA, T. I., Institute of Epidemiology and Microbiology Imeni Gamaleya

"Electron Microscope Study of Type B Clostridium botulinum During Toxin Formation"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, Jul 70, pp 109-112

Abstract: A study was made of ultrathin sections of botulinum type B (strain 175) cultured on casein-mushroom medium for 24 to 48 hours. Most of the cells were found to be in the vegetative stage; the cell walls consisted of five layers 300 to 350 Å thick. Toxin formation was most intense after 5 to 7 days, and many bacterial cells were simultaneously undergoing lysis. Within, around, and between the cells were osmiophilic masses that often formed crystals. The periodicity of the crystal lattice was about 150 Å. The lattice was symmetrical in three dimensions and its construction was like that of protein crystals. The osmiophilic masses are believed to be the protein-toxin produced by the cells and released into the medium upon complete or partial lysis.

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USSR

UDC 576.851.48.095.18:541.454

POLYAKOV, A. A., PAVLOVA, I. B., and KULIKOVSKIY, A. V., All-Union Scientific Research Institute of Veterinary Sanitation and Moscow Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Dynamics of Structural Changes in E. coli and Staph. aureus Following Application of Alkalies"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971, pp 31-35

Abstract: The bactericidal effects of sodium and potassium hydroxide on E. coli and Staph. aureus were investigated by electron microscopy. The alkalies dissolve the outer cell membrane in 5-10 min, further dissolve and create perforations in the outer membrane and attack the cytoplasmic membrane in 30-45 min, and completely destroy both membranes and break the cytoplasm and karyoplasm into granular segments of various electron density in 60-80 min. The minimum effective concentrations of the alkalies is 0.2% with respect to E. coli and about 0.9% with respect to Staph. aureus. It is concluded that the alkalies saponify the lipid fraction of the membranes, after which enzymes destroying the protein and mucopeptide fraction are released. Staph. aureus is more resistant to alkalies because its membrane is made of a smaller portion of lipids and a larger portion of mucopeptides.

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USSR

UDC: 519.2

PAVLOVA, I. F.

"Determination of an Unbiased Estimate for an Unknown Parameter of a Random Quantity Assigned by a Generalized Gamma Distribution"

Tr. Sev.-Zap. zaoch. politekhn. in-ta (Works of the Northwest Polytechnical Correspondence Institute), 1971, No 14, pp 6-10 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V132)

[no abstract]

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Acc. Nr.: AP0030989 P Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 1, pp 47-50

# SPECIFICITY OF NICOTINAMIDE CO-ENZYMES (NAD AND NADP) DISTRIBUTION IN CELLULAR STRUCTURES OF THE LIVER AND BRAIN IN PATHOLOGICAL CHANGES OF CHEMICAL ORIGIN

Pavlova, I.I.; Khaykina, B.I.

Institute of Hygiene and Toxicology of Pesticides, Polymers and Plastics, Kiev

The effect of different doses and exposure periods to the action of the organo-chlorine pesticide DDT on the content of nicotinamide co-enzymes in cellular structures of the liver and brain of albino rats was studied. DDT was administered perorally in amounts of 70 mg/kg three times in succession of in doses of 3.5 mg/kg daily for 5 months. Both with a three-fold introduction of large doses and in a long-term action of small doses of the pesticide a substantial fall of the nicotinamide nucleotides (NAD and NADP) level in the homogenate and their nonuniform distribution in the hepatic cellular structures were revealed. In cellular structures of the brain a uniform decline of the NAD and NADP levels was noted, while protracted introduction of small DDT doses was followed by an appreciable decrease of their content in the mitochondria, due, apparently, to cumulative properties of the pesticide. Falling NAD and NADP content in cellular fractions of the liver and brain is indicative of decreased energy potentialities of the tissues and can be used as one of the early signs of poisoning produced by DDT.

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REEL/FRAME 19691015

USSR

VINOGRADOV, A. V., ZEMLYANUKHINA, N. A., PAVLOVA, I. V., DRONOVA, M. P., and LOPATINA, N. N.

"Correlation of Methods of Determining Aluminum in Beryllium and in its Alloys"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 2, 1973, pp 148-149

Abstract: For the determination of 0.1-30% aluminum in beryllium and in beryllium-aluminum alloys methods are recommended which do not require preliminary separation of these elements. The photometric method with methylthymol blue (MTB) is recommended for concentrations $\geq$ 0.1% Al. Be did not give a colored complex with MTB at pH 3, but in high concentrations Be lowers the optical density of the solution. Complexone-III makes it possible to determine Al in the presence of many elements shielded by the complexone. A verification was made of the effect of Be on the Complexometric determination of Al by means of back titration of complexone excess by a solution of thorium salt with MTB indicator at pH 3 in solutions with Al:Be from 1:1 to 1:20. The examination of the gravimetric method with hydroxyquinoline showed that high concentrations of Be hinder the precipi ation of Al. A comparative evaluation of the three methods on two samples of binary Be-Al alloys revealed that the gravimetric-hydroxyquinoline method is most exact and the photometric method is most rapid. The latter is recommended and its practicability is discussed. One table, nine bibliographic references.
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USSR

UDC 617-001.21-02:538.3-092:616-008.9

PAVLOVA, I. V., DROGICHINA, E. A., SADCHIKOVA, M. N., and GEL'FON, I. A., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"The Role of Some Biochemical Disturbances in the Pathogenesis of Radiation Sickness"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 20-23

Abstract: The results of an analysis of biochemical indices in 70 patients with different forms of chronic exposure to the effects of microwaves are reported. The patients were 28-39 years old, with 5-10 years of service. Several deviations from normal levels were observed: disproteinemia, due to increased β- and γ-globulins, and low mercury bichloride test, while the activity of liver enzymes appeared to be normal. About half of the patients showed high levels of cholesterol, and 2/3 had low blood levels and high urinary excretion of chlorides. Blood sugar levels after a glucose load were within the normal range, but atypical. These shifts indicate disruption of mechanisms regulating the activity of the sympathetic-adrenal system, including shifts in the functional condition of the hypothalamus-hypophysis-adrenal system.

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USSR

UDC 616.24-003.668.4-092.9-008.939.6

PAVLOVA, I. V., KHARLAMOVA, S. F., and KURYSHEVA, N. G., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR

"Protein Metabolism in Experimental Berylliosis"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 5, 1970, pp 56-57

Abstract: Single injections of rats with BeO (intratracheally) or $BeSO_4$ (intramuscularly) decreased the albumin content, while increasing the content of alpha- and gamma-globulins in serum. Injections also decreased the content of SH groups in liver mitochondria. Radioisotope studies (1-$C^{14}$-lysine and 1-$C^{14}$-glycine) revealed a high rate of incorporation of the isotope into soluble and insoluble proteins in both liver and lung tissue after the rats were poisoned with BeO. Thus, protein metabolism is significantly affected by beryllium. Shifts were noted primarily in the organs for which the element has an affinity. Shifts involved protein synthesis and lysis as well as protein structure (electrophoretic mobility, lowered level of SH groups).

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USSR

ARKHIPOVA, O. G., and PAVLOVA, I. V.

"Biochemical Investigations in the Study of the Toxicity of Chemicals"

V sb. Printsipy i metody ustanovl. predel'no dopustimykh kontsentratsiy vredn. veshchestv v vozdukhe proizv. pomeshcheniy (Principles and Methods of Establishing Maximum Permissible Concentrations of Harmful Substances in the Air of Industrial Premises -- Collection of Works), Moscow, "Meditsina," 1970, pp 41-49 (from RZh-Biologicheskaya Khimiya, No 2, 25 Jan 71, Abstract No 2F2087 by A. IGNAT'YEV)

Translation: Survey. Bibliography with three titles.

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USSR UDC: 612.013.7.014.45

SHKARINOV, L. N., PAVLOVA, I. V., and KOMOVA, A. D., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR

"Comparison of the Effects of Different Kinds of Noise on Energy Metabolism in Experimental Animals"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 1, 1971, pp 5-9

Abstract: Rats were exposed to various frequencies and levels of noise (125 and 4,000 hz at 80 db and 125 and 4,000 hz at 97 db) 6 hours a day for 7 days. The content of pyruvic acid, creatine, creatinine, amino nitrogen, and inorganic acid in urine served as indexes of energy metabolism. Lactic acid and phosphorus fractions were determined in the brain, blood, and some internal organs after the experiments. Noise at 125 and 4,000 hz and 80 db reduced the content of pyruvic acid, creatine, etc. but had no effect on blood and brain lactic acid, an indication of intensification of the oxidative processes and glycolysis and resulting accumulation of macroergic phosphorus compounds. The action of octave bands with mean geometric frequencies of 125 and 4,000 hz at 97 db inhibited glycolysis in the CNS and disrupted the oxidative processes in the brain and viscera.

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UDC 616.24-003.662-092.9.07:616.24-008.939.6

USSR

PAVLOVA, I. V., VASIL'YEVA, G. N., GEL'FON, I. A., and VERETINSKAYA, A. G., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"Lung Tissue Proteins in Experimental Silicosis"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 8, Aug 70, pp 25-29

Abstract: The chemical composition of lung tissue protein was studied in normal rats and in rats in which experimental silicosis had been produced. The insoluble hydroxyproline-rich collagen that formed in silicosis differed in composition from the collagen of the skin or other tissue only in that the hexose content was higher, although the hexose content was 15% lower for silicotic as compared to normal lungs. The content of hydroxyproline-containing insoluble proteins did not increase over period of up to 6 mo during the development of silicosis; the increase in weight of the lungs within that time was due to a uniform increase in the amount of all tissue constituents, including soluble proteins. As the content of insoluble collagens started to increase, the concentration of hydroxyproline-containing soluble proteins also increased. Insoluble collagen is identical to the collagen of other tissues in amino acid

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PAVLOVA, I. V., et al, Gigiyena Truda i Professional'nyye Zabolevaniya, No 8, Aug 70, pp 25-29

composition (including the content of proline, hydroxyproline, and tyrosine) and also did not differ in this respect from the insoluble collagen of normal lungs. The content of mucopolysaccharides increased in silicotic lungs, particularly after 6.5 mo. The changes in collagen stability during silicosis which were detected by morphological and histochemical methods are evidently due primarily to changes in the collagen fiber structure and only secondarily to changes in the protein structure.

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USSR UDC 669.295.472

GOPIYENKO, V. G., PAVLOVA, L. A., BAYMAKOV, Yu. V., ZHAYLO, V. A.

"Influence of Current Density and Temperature on Anode Dissolution of Metallic Titanium in Melts"

Tr. Vses. N.-i. i Proekt. In-ta Alyumin., Magn. i Elektrod. Prom-sti [Works of All-Union Scientific Research and Planning Institute for the Aluminum, Magnesium and Electrode Industry], No 79, 1971, pp 127-136, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G262 by G. Svodtseva).

Translation: Studies performed over a broad range of temperatures (150-750°) and electrolyte compositions (NaCl-KCl, NaCl-$MgCl_2$, NaCl-$AlCl_3$) have shown that in all cases, the anode yield per current decreases with increasing current density and decreasing temperature. The main factor determining the quantitative aspect of anodic dissolution of Ti is the change in the type of electrode reaction. Certain reasons for the deviation of anode yields per current from the theoretical quantities are suggested. 6 Figures; 7 Biblio. Refs.

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1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--REACTIONS OF HYDROXYPHTHALANS WITH ACETYLENIC RADICALS. 3,3,DIPHENYL,1,ARYLETHYNYL,1,HYDROXYPHTHALANS -U-

AUTHOR-(03)-MELENTYEVA, T.G., ANDREYEV, S.A., PAVLOVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 853-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACETYLENE, FREE RADICAL, BENZENE DERIVATIVE, HYDROXYL RADICAL, KETONE, AMINE, ORGANIC NITRO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2082 STEP NO--UR/0366/70/006/004/0853/0856

CIRC ACCESSION NO--AP0125669

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 020

CIRC ACCESSION NO--AP0125669

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ISOMERIZATION OF 3,3,DIPHENYL,1,PHENYLETHYNYL,1,HYDROXYPHTHALAN (I) OR 3,3,DIPHENYL,1,(P,TOLYLETHYNYL),1,HYDROXYPHTHALAN (II) TO PHENYL 3,3,DIPHENYL,1,PHTHALANYLIDENEMETHYL KETONE OR TOLYL 3,3,DIPHENYL,1,PHTHALANYLIDENEMETHYL KETONE IN BOILING ACOH PROCEEDS SLOWER THAN IS THE CASE WITH 3,3,DIMETHYL I OR II ANALOGS. THE FOLLOWING REACTIONS ARE SIMILAR IN BOTH SERIES. THE REACTION OF I OR II WITH 3,METHYL,1,PHENYL,2,PYRAZOLIN,5,ONE GAVE BETA,(3,3,DIPHENYL,1,PHTHALANYLIDENE),ALPHA,(3,METHYL,1, PHENYL,2,PYRAZOLIN,5,ON,4,YLIDENE)ETHYLBENZENE OR P,(BETA,(3,3,DIPHENYL,1,PHTHALANYLIDENE), ALPHA,(3,METHYL,1,PHENYL,2,PYRAZOLIN,5,ON,4,YLIDENE)ETHYL) TOLUENE. THE REACTION OF I WITH 2,4,(O SUB2 N) SUB2 C SUB6 H SUB3 NHNH SUB2 GAVE 2,PH SUB2 (OH), CC SUB6 H SUB4 C(C TRIPLE BOND CR):NNHC SUB6 H SUB3 (NO SUB2) SUB2,2,4 (R EQUALS PH OR P,MEC SUB3 H SUB4. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

KUZ'MIN, K. I., et al, Leningrad, Zhurnal Obshchey Khimii, Vol 39, No 8, pp 1797-1798

$$2R_2AsC{\equiv}CMgBr + 2(R'CO)_2O \longrightarrow 2R_2AsC{\equiv}CCR' + MgBr_2 + (R'COO)_2Mg \qquad (2)$$

O

The obtained ketones are slightly colored, readily distillable (without decomposition) liquids which are unstable in air. In reactions with acid chlorides, the organomagnesium derivatives of dialkylethynylarsines behave as ordinary magnesium bromoalkyls. The synthesis yielded a total of five new carbonyl dialkylethynylarsines never described before in literature.

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USSR

UDC 547.342 + 547.391 + 547 29'26

KUZ'MIN, K. I., and PAVLOVA, L. A., Kazan' Institute of Chemical Technology imeni S. M. Kirov, Kazan, Ministry of Higher and Secondary Specialized Education RSFSR

"Synthesis of Dialkylarsinacetylene Acids and Their Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1112-1113

Abstract: Dialkylarsinacetylene acids were obtained for the first time by the interaction of magnesium-bromine derivatives of dialkylethynylarsines with carbonic acid. The interaction of the ethyl ester of chlorocarbonic acid with magnesium-bromine derivatives of dialkylethynylarsines gives ethyl esters of dialkylarsinacetylene acids. The structure of the resultant compounds was confirmed by IR spectra. The frequency of the acetylene bond in the IR spectrum varies insignificantly with changes in the nature of the group replacing the ethynyl hydrogen atom, whereas the absorption band intensity depends on the nature of the substituent.

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1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--PROPHYLACTIC APPLICATION OF DRY POLYVALENT DYSTENTERY BACTERIOPHAGE WITH PECTIN IN CHILDREN'S PRE SCHOOL INSTITUTIONS -U-
AUTHOR-(05)-SOLODOVNIKOV, YU.P., PAVLOVA, L.I., MELYANOV, P.I., GARNOVA, N.A., NOGIEVA, YU.B.
COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5, PP 131-137
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROPHYLAXIS, BACTERIOPHAGE, DYSENTERY, EPIDEMIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0139 STEP NO--UR/0016/70/000/005/0131/0137

CIRC ACCESSION NO--AP0114535
UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0114535
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PRESENT THE RESULTS OF STRICTLY CONTROLLED EPIDEMIOLOGICAL TRIAL ON THE STUDY OF THE EFFICACY OF DRY POLYVALENT DYSENTERY BACTERIOPHAGE WITH PECTIN IN CHILDREN'S PRE SCHOOL INSTUTIONS OF YAROSLAVL. THE CHILDREN WERE GIVEN BACTERIOPHAGE DAILY DURING THE MONTHS FROM JUNE TO OCTOBER. THIS LED TO DECREASE OF THE INCIDENCE OF THE FOLLOWING DISEASES IN THE GROUP UNDER STUDY: OF BACTERIOLOGICALLY CONFIRMED DYSENTERY, 2.5 TIMES, OF CLINICALLY AND BACTERIOLOGICALLY CONFIRMED DYSENTERY, 2.3 TIMES, AND OF THE SUM TOTAL OF ACUTE INTESTINAL DISEASES, 2.1 TIMES. FACILITY: TSENTRAL'NYY INSTITUT EPIDEMIOLOGII, GOR'KOVSKIY INSTITUT EPIDEMIOLOGII I MIKROBIOLOGII, YAROSLAVSKAYA GORODSKAYA SANITARNO-EPIDEMIOLOGICHESKAYA STANTSIYA.

UNCLASSIFIED

Acc. Nr: AP0036573 Ref. Code: UR 0391

PRIMARY SOURCE: Gigiyena, Truda i Professional'nyye Zabolevaniya, 1970, Nr 2, pp 41-43

# BACKGROUNDS FOR ESTABLISHING MAXIMUM PERMISSIBLE CONCENTRATION OF DIISOPROPYL BENZENES IN THE AIR OF INDUSTRIAL PREMISES

*L. P. Pavlova*

Summary

A study into comparative toxicity of m- and p-DIPB at the level of lethal, toxic and threshold concentrations and dosages elicited the absence of any essential differences, in these isomers. A mild local cutaneous and some signs of resorptive action of DIPB were detected. DIPB is virtually devoid of cumulative capability. Chronic action of their fumes in a concentration of 1 mg/l produced inhibition of the central nervous system, disturbances of the antitoxic-synthetic and protein-forming function of the liver, sharply pronounced primary leukocytosis with subsequent tendency towards leukopenia. Concentration of 0.2 mg/l proved to be a threshhold one in a chronic test. A concentration of DIPB equalling 0,05 mg/l (50 mg/m³) is recommended as a maximum permissible one for the atmosphere around work places. 1

D.n. 6

REEL/FRAME 19761425

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UDC 577.1:615.7/9

PAVLOVA, L. P., and YELISUYSKAYA, R. V.

"Nervous Function in Animals Chronically Poisoned with Metadiisopropylbenzene"

Tr. Azerb. NII gigiyeny truda i profzabolevaniy (Transactions of the Azerbaydzhan Research Institute of Industrial Hygiene and Occupational Diseases), 1970, No 5, pp 176-179 (from RZh-Biologicheskaya Khimiya, No 10, May 71, Abstract No 10 F1683 by M. Shuster)

Translation: Mice and rabbits were poisoned with the fumes of metadiisopropylbenzyne (I) for 5 hours daily for 5 months 5 times a week (concentration of I 1 and 0.2 mg/L). Straight-line movements (after radial acceleration), muscular strength (MS), and duration of enforced swimming were determined in the animals. The acetylcholine (II) concentration and cholinesterase activity were determined in the animals' blood. The rate of restoration of straight-line movements and MS decreased markedly after poisoning with I. After chronic poisoning with I there was a general tendency for cholinesterase activity to decrease. The concentration of II rose during the first few months of poisoning but began to fall beginning with the 3rd month.

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1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THE STATE OF PROTEIN AND AMINOACID SPECTRUM OF THE BLOOD SERUM IN RELATIVES OF PATIENTS WITH LUPUS ERYTHEMATOSUS -U-
AUTHOR-(03)-GLAVINSKAYA, T.A., PAVLOVA, L.T., KOMAROVA, V.D.

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CIRC ACCESSION NO--AP0108781

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIES PROTEIN AND AMINOACID SPECTRUM OF THE BLOOD SERUM, AS WELL AS LABILE GLOBULINS IN 57 RELATIVES FROM FAMILIES OF 37 PATIENTS WITH DIFFERENT FORMS OF LUPUS ERYTHEMATOSUS. CLINICALLY HEALTHY MEMBERS OF FAMILIES OF THE PATIENTS WERE FOUND TO HAVE DISPROTEINEMIAS, THE CHARACTER OF WHICH WAS SIMILAR TO THAT IN LUPUS ERYTHEMATOSUS. IN MOTHERS WHOSE CHILDREN SUFFERED FROM LUPUS ERYTHEMATOSUS THE MOST IMPORTANT FINDINGS WERE HYPOALBUMINEMIA AND HYPERGAMMAGLOBULINEMIA. IN CHILDREN WHOSE MOTHERS SUFFERED FROM LUPUS, ERYTHEMATOSUS A TENDENCY TO HYPOGAMMAGLOBULINEMIA WAS OBSERVED RELATIVELY MORE FREQUENTLY. DIRORDERS OF THE PROTEIN SPECTRUM WERE ACCOMPANIED BY DISBALANCE OF SOME FREE AMINOACIDS, MOST FREQUENTLY OF TYROSINE, LESS FREQUENTLY OF CYSTINE AND PHENYLALINE.

FACILITY: KAFEDRA KOZHNYKH I VENERICHESKIKH BOLEZNEY GOR'KOVSKOGO MEDITSINSKOGO INSTITUTA IM. S. M. KIROVA.

USSR

UDC 669.71.053.4

NIKOLAYSHVILI, N. M., GILASHVILI, L. V., PAVLOVA, L. V.

"Obtaining Alumina from High Grade Georgian Aluminum Raw Material"

Tr. Kavkaz in-ta mineral'n. syr'ya (Works of the Caucasian Institute of Mineral Raw Materials), 1971, vyp. 9 (11), pp 363-365 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G178)

Translation: A study was made of syenites, trachytic and pumice tuffs by the method of chemical beneficiation of the rock by alkaline solutions in autoclaves and open vessels at atmospheric pressure with subsequent sintering of the concentrates obtained with $CaCO_3$ and $Na_2CO_3$ and also by the method of direct sintering of the rock with $CaCO_3$ and $Na_2CO_3$. The pumice tuffs are the most easily stripped rock. The concentrates obtained after chemical beneficiation contain 23-27% $Al_2O_3$ and 36-40% $SiO_2$. When sintering these concentrates at 1,150-1,200° with $CaCO_3$ and $Na_2CO_3$, the $Al_2O_3$ extraction was 81-91% and alkali was 81-85%. By the direct sintering scheme, the $Al_2O_3$ extraction was 80-28% and alkali, 75-78%. The optimal conditions of reduction of alunitized rock are the following: temperature 620-650°, duration 1 hour, amount of reducing

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NIKOLAYSHVILI, N. M., et al., Tr. Kavkaz in-ta mineral'n. syr'ya, 1971, vyp. 9 (11), pp 363-365

agent 2% of the sample weight, fineness of crushing 270 mesh. The $Al_2O_3$ extraction was greater than 68%. The leaching out of the reduced alunitized rock under the conditions of alkali concentration 100-150 grams/liters, time 30 minutes, temperature 95-98°, S: L = 1:4, permits extraction of 67-68% of the $Al_2O_3$. With sintering of the reduced alunitized rock, the $Al_2O_3$ extraction was 92%.

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USSR

UDC 547.436

KOSTYUKOVSKIY, Ya. L., BRUK, Yu. A., PAVLOVA, L. V., SLAVACHEVSKAYA, N. M., KOKUSHKINA, A. V., MIRKIN, B. S., BELEN'KAYA, I. A.

"Alkanethiols and Their Derivatives. I. Acid-Base Properties of N-Substituted β-Aminoalkanethiols"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 3, Mar 72, pp 662-665

Abstract: The acid-base properties of a number of N-substituted β-aminoalkanethiols and some related compounds are studied under standard conditions to evaluate the effect of structural singularities of thiol on the acidity of the SH-group, and hence on sulfhydryl reactivity. The results of the studies show that increased acidity of the SH group is determined chiefly by the capacity of the given compounds to form a zwitter-ion structure, and to a lesser degree by the nature of the alkyl substituents associated with the nitrogen atom. The effect of alkyl substituents on the basicity of the amino group is not so clearly expressed as a consequence of other factors connected with the inductive effect.

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USSR UDC: 512.25/.26+519.3:330.115

PAVLOVA, L. V.

"A Dual Problem of Chebyshev Approximation"

Tr. 3-y Zimn. shkoly po mat. programmir. i smezhn. vopr., 1970, vyp. 2 (Works of the Third Winter School on Mathematical Programming and Related Problems, 1970, No 2), Moscow, 1970, pp 443-449 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V492)

Translation: Let a system of $m$ points $X=\{x^1,\ldots,x^m\}$ be given in $R^n$. The author seeks the hyperplane which deviates the least from the system $X$, i. e.

$$\min_{A}\max_{1\le i\le m}\rho(A,x^i), \qquad (1)$$

where $\rho(A,x^i)$ is the distance from $x^i$ to the hyperplane $A\equiv a_1\xi_1+\ldots+a_n\xi_n+a_{n+1}$. It is shown that (1) is equivalent to the multiple-extremum problem of concave programming

$$\max\left\{\sum_{j=1}^{n}a_j^2 \;\middle|\; \left|\sum_{j=1}^{n}a_jx_j^i+a_{n+1}\right|\le 1,\quad i=1,\ldots,m\right\}.$$

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PAVLOVA, L. V., Tr. 3-y Zimn. shkoly po mat. programmir. i smezhn. vopr., 1970, vyp. 2, Moscow, 1970, pp 443-449

A solution of the problem is given for $n = 2$, $n = 8$. S. Lebedev.

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Acc. Nr. AP0049839 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code UR0075

106802q Interaction of chloride, sulfate, and thiocyanate complexes of rhenium(IV) with tin(II). Improvement in the rhenium–thiocyanate method. Pavlova, M. (Inst. Gen. Inorg. Chem., Sofia, Bulg.). *Zh. Anal. Khim.* 1970, 25(1), 123–7 (Russ). When $10^{-4}$ *M* perrhenate soln. in 4 *N* HCl is reduced by an excess of $SnCl_2$, Re(IV) complexes unsatd. with respect to Cl are formed, which interact with Sn(II). Stoichiometric coeffs. of this reaction studied by the Asmus (1960) and Burbanel (1964) methods and by the equil. shift method correspond to a Re:Sn ratio of 1:1. In the presence of excess thiocyanate, a Re(IV)–thiocyanate complex is formed which reacts with Sn(II). Optimum conditions for the detn. of Re by the thiocyanate method exist at 5–10 μg Re (in 50 ml), acidity 7–9 *N* $H_2SO_4$, 5 ml 2 *M* $NH_4SCN$, 2 ml 0.1 *M* $SnCl_2$. The molar absorptivity is high ($4.1 \times 10^4$ $cm^2$-millimole$^{-1}$).

Chaim Weiner

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CHKANIKOV, D. I., MAKEYEV, A. M., PAVLOVA, N. N., and DUBOVOY, V. P., All-Union Scientific Research Institute of Phytopathology, Bol'shiye Vyazemy, Moscow Oblast

"The Behavior of 2,4-D in Plants With Different Resistance to This Herbicide"

Moscow, Fiziologiya Rasteniy, Vol 18, No 6, Nov/Dec 71, pp 1,253-1,259

Abstract: In plants sensitive to 2,4-D (sunflower and mustard), the herbicide is quickly carried away from the leaves to which it is applied and accumulates in the growth tips and stalks, almost without being metabolized. In moderately sensitive plants (bean, soya, pea, coleus, beechwheat, and common lamb's-quarters), the herbicide is transported at a lower rate, and a portion of it is metabolized to low molecular-weight water-soluble or ether-soluble metabolites. In resistant plants (wheat, maize, plantain, lady's mantle, and strawberry), the herbicide remains in the leaves either in the initial, free form or conjugated with large molecules. Immobilization of the herbicide in the leaf tissue is one important mechanism of resistance, and this fixation can be achieved not only by conjugation but also by other means.

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USSR

UDC: 621.315.3

SHCHERBAKOV, G. P., TROSHKOVA, I. I., TOLMACHEVA, A. Ye., NEKRASOV, V. A., PAVLOVA, N. N.

"The Drop Method of Removing the Glass Insulation From Microwires and its Possibilities"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 153-158 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V421)

Translation: The authors evaluate the possibilities of using the drop method of removing glass insulation to produce a contact joint in making filament resistors and voltage dividers, and in adjusting resistors to their rated value. It is experimentally shown that organic insulation of the Teflon type can be applied to the wire. Some characteristics of the molten drop are given (rate of glass destruction, etc.), together with the strength parameters of the wire. Resumé.

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Acc. Nr. AP0041856

Abstracting Service: CHEMICAL ABST. 4/70

Ref. Code UR0366

P

89695n Reactions of α-chlorinated ethers in the presence of zinc. X. Synthesis of selenoacetals. Lapkin, I. I.; Pavlova, N. N.; Pavlov, G. S. (Perm. Gos. Univ., Perm, USSR). *Zh. Org. Khim.* 1970, 6(1), 71–4 (Russ). The reaction of RCH-Cl(OMe) with $R^1SeH$ in the presence of Zn in abs. $Et_2O$ gave 50–68% $RCH(SeR^1)_2$ (I). The mechanism of the reaction was described earlier (Lapkin, I. I.; 1967). The oxidn. of I with $HNO_3$ gave 60–5% $R^1SeO_2H.HNO_3$. CPJR

REEL/FRAME
19751737

Metrology

USSR

UDC 528.235:528.9

PAVLOVA, O. A.

"Perspective Azimuthal and Cylindrical Projections with Positive Representation of the Earth's Surface and Their Application for Mapping and Geographic Control of Space Photographs of the Earth"

Leningrad, Vestnik Leningradskogo Universiteta, No 12, June 1970, pp 126-130

Abstract: The article deals with an investigation of some perspective azimuthal cylindrical projections for compiling geographical maps and constructing a cartographic grid on the basis of space photographs of the Earth.

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USSR UDC: 539.1.01

BAGROV, V. G., KLIMENKO, YU. I., and PAVLOVA, O. S. (Moscow State University imeni M. V. Lomonosova)

"Stimulated Emission of Neutral Fermi Particles Moving in a Plane Wave"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy Fizika, No 8, 1970, pp 50-53

Abstract: The authors study the stimulated emission of neutral Fermi particles with an anomalous magnetic moment moving in a powerful electromagnetic wave under the effect of a second electromagnetic wave of lower intensity. It is shown that this type of process can result in a preferred spin orientation of a particle. The authors express thanks to Professor I. M. Ternov for his assistance. Original article: six formulas and two bibliographic entries.

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USSR

UDC: 771.5

BALABUKHA, N. A., KORNDORF, V. A., PAVLOVA, R. A., All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev

"A New Standard for the Method of Resolvometric Testing, and Modern Projection Resolvometers"

Leningrad, Issledovaniya v Oblasti Opticheskikh i Svetovykh Izmereniy, Trudy Metrologicheskikh Institutov SSSR, No 114(174), 1970, pp 96-103

Abstract: The article reviews the new State Standard GOST 2819-68 for the method of resolvometric testing of black-and-white and color photographic materials on a transparent base with a resolution of up to 1200 lines/mm. Resolvometric tests of photographic materials with resolutions up to 600 lines/mm should be done with a type OS-16 microscope objective with a number aperture of 0.3. Projection resolvometers type SR-17 and RP-2 are recommended for this resolution range. For testing high-resolution materials, a type OS-8 microscope objective should be used with a number aperture of 0.65 and a type RP-2M resolvometer. The types of presently used resolvometers and the RP-2M resolvometer are described, and the characteristics of the Ascheulov test transparencies used in the resolvometers are given. Fig. 7, bibl. 21.

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